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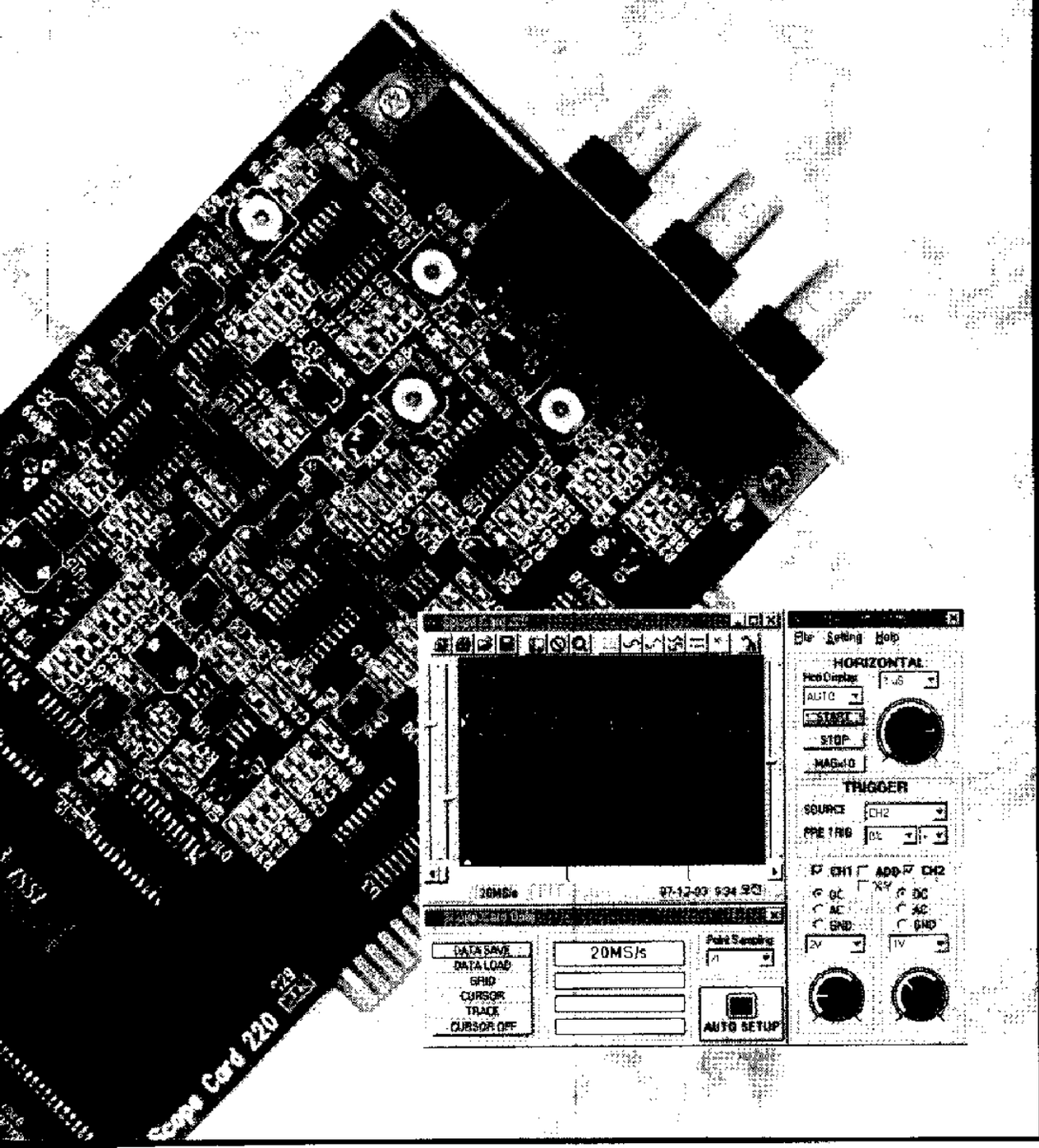


HUNG CHANG

http://www.hungchang.co.kr

This chapter introduces you to the scope card 220 program and provides specifications for the scope card boards.
It is divided into two sections as follows;

Introduction	*Provides a general product description*
Supported Hardware	*Provides specifications for the following scope card 220 boards.*

Introduction

Scope card 220 is a powerful software package for controlling the scope card 220 of IBM PC-based oscilloscope.
The program allows multiple boards to operate together to perform simultaneous data acquisition on up to 16 different channels as rate as high as 20MS/s.

The user has complete control of all capture and display feature .
As many as 16 channels can be viewed together on the PC screen, and signals and system setups can be saved to disk for future use.
Scope card 220 requires a VGA monitor and graphics adapter and will make use a numeric co-prosessor, if present. Display screens can be printed to the printer that supported to the windows 95

Scope card 220 Specifications

Minimum System Requirements	: IBM PC 486, Pentium or compatible with 8MB of RAM (Recommend 16MB); VGA graphics card and monitor; and at least 10 MB of free hard disk space. Scope card board must be present in the system to acquire data. At windows 95 software.
Size	: Single slot full-length 8-bit ISA PC board
Power	: Max : 5W
Environmental Conditions	: 10°C ~ 35°C

Hardware

Inputs per scope card	2
Sample Rate	CH1 : 20MS/s, CH2 : 20MS/s, DUAL : 20MS/s
Memory Depth	32KB/CH
Bandwidth	2MHz
Resolution	8 bits
Amplitude	Max 300V + pk
Auto Setup	30Hz to 2MHz, 35Vp-p Max.
Protection	Diode clamped
Connector	BNC
Impedance	1MΩ, 25pF

Triggering

External Trigger Coupling	AC
External Trigger Input	More than 1.5V
Trigger Source	CH1/CH2/EXT
Trigger Levels	±3div
Trigger Slope	Positive or negative
Trigger Mode	0%, 25%, 50%, 75%
Trigger Type	Analog

Display

Traces	Trace View
Time Range	50ns/div to 0.5s/div 1-2-5 22-step
Cursors	ΔV and ΔT
Vertical Mode	CH1/CH2/DUAL/ADD
Horizontal Mode	Auto/Norm/Single
Grid	on/off
Zoom	Voluntary Screen
X-Y Mode	
Coupling	DC - AC - GND
Input Range	50mV/DIV to 5V/DIV 1-2-5 7- Step
Scroll Mode display	10sec, 30sec, 1min,10min, 30min, 1HR (When you installed the setup Digital scope scroll)

Output

Hard copy	The printer that supported to the windows 95
Materials Supplied	Scope card 220 Installation CD
Software Drives	Available as a DLL for the windows 95 environment for Visual C++ and Visual Basic

Mechanical specifications

Dimensions	100 × 180mm
Weight	200g approx

Warranty

Warrants that this product will be free from defects in materials and workmanship for a period of one(1) year from the lute of shipment.

This chapter describes the installation procedure for the scope card 220 program and for the scope card 220 boards.
You will perform the following steps;
- Install one or more boards inside your PC
- Run the INSTALL program to install the scope card 220 program files.
- If necessary, remove the board to reset switches for alternate scope card address, re-install any board with new switch settings.

Basic Installation

1. Powering off your PC

Turn your PC's main power switch to OFF before opening the PC's cover to install one or more boards.

2. Installing the board(s)

Single board ;

Open your PC's cover, consult your computer's user manual, and select an unused full-sized expansion slot.
If possible, it is recommended that you place the board in the unused slot farthest from the disk drive(s).
Insert the board into the expansion slot and screw the card bracket to the chassis.

Multiple boards :

When you install multiple boards, the first board you install will be the MASTER board. The MASTER board controls the operation of any SLAVE board(s) installed in the system. It generates the clock and is sue triggers to all board, controlling the timing for captures from all boards.

Important **:** Record the scope card 220 addresses shown on the cartons in which each of the boards was shipped in order, from the MASTER through to the last SLAVE. You will have to enter these addresses when running the scope card 220 program described below.

To simplify installation of the MASTER/SLAVE interconnect, insert the MASTER board into the rightmost vacant expansion slot inside PC (looking along the board slots toward the mounting brackets).

Insert the board into the expansion slot and screw the card bracket to chassis. Insert subsequent board(s) into adjacent expansion slots.

3. Powering on the PC

After masking sure the board or boards are properly seated in the PC (and the cable correctly installed if you have installed more than one board), close the PC's cover and turn the main power switch back to NO.

See the RUNNING INSTALL section below for instructions on how to install the scope card 220 program and verify the installation of your board.

To install the scope card 220 program on your PC, select the appropriate CD for your computer's CD drive.

- *Insert the distribution CD into drive CD.*
- *Run windows.*
- *Select File menu.*
- *Select Run option.*
- *Enter file to run*

[CD drive] : *setup Digital scope(General mode)*
setup Digital scope scroll (scroll mode)

- *Follow the on screen instruction.*

1. Specifying scope card 220 addresses

Single Board

Use the mouse to move the cursor to the scope card 220 ADDRESS field for the first or only board. Check the game port status line in the scope card 220 configuration utility display. If your computer does not have a game port, the default address suggest by the program is probably unused, so leave this field set to the default.

Use the mouse to move the cursor to the setting field in the scope card control for the first or only board.
The default address suggested by the program is probably unused, so leave this field set to the default.

Multiple Boards

If you installing more than one board, use the mouse to move the cursor to the box for the next board. Use the mouse to the cursor to the scope card 220 address field, and selects OK. Type in the scope card 220 address shown on the carton in which the board was shipped in hexadecimal format, for example 280H. (If you neglected to record the scope card 220 address before installing the scope card 220 hardware it may be necessary to open you computer to check the scope card 220 addresses of the hardware in order, from the MASTER board to the last SLAVE board.) Selects (OK) again to conform the value.
Repeat this step until you specified scope card 220 address for the installed board.

2. Checking the Install Board(s)

Single Board

Selects the setting field to verify the scope card 220 address of the installed board. If there is problem with the scope card 220 address, a message will inform you that the board is not available ; "scope card 220 not found ? change address." This means that you need a new scope card 220 address.

Multiple Boards

Selects the setting field to verify the scope card 220 address of the installed board. If there is problem with the scope card 220 address, a message will inform you that the board is not available ; "scope card 220 not found ? change address." This means that you need a new scope card 220 address.

Once scope card 220 has been run successfully, the scope card 220 program will have no trouble finding and capturing signals from the installed board(s)

[redacted]

1. **Powering off your PC and removing any Inserted Board(s)**
   Turn your PC's main power switch to OFF before opening the PC's cover.
   If you previously installed one or more boards during basic installation, open the PC's cover and remove the board(s).

2. **Setting Jumpers on the Board**
   If you need to change any scope card 220 addresses, choose alternate addresses using the guidelines in the Alternate Addresses section below.
   Using the diagrams and charts, set the jumpers on your boards to select the new addresses.

3. **Installing the Board(s)**
   Follow the instructions in the Basic Installation section above to re-install the board(s).

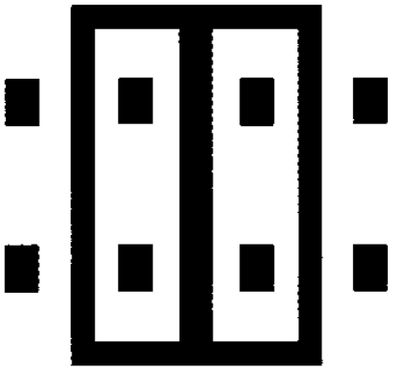
4. **Power on the PC**
   After making sure each board is properly seated in the PC and all interconnects are correctly installed, close the PC's cover and turn the main power switch back to ON. If you have not yet attempted the Basic installation, see the RUNNING INSTALL section above for instructions on how to install the scope card 220 program and run scope card 220

   If you have already run INSTALL once during Basic installation, you do not have to run it again. To run scope card 220 alone,

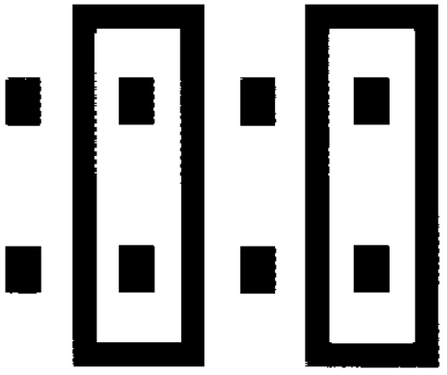
Addresses are selected by moving the jumpers so that they are connected to four of the four jumper locations.

The following diagram lists the settings for each address block

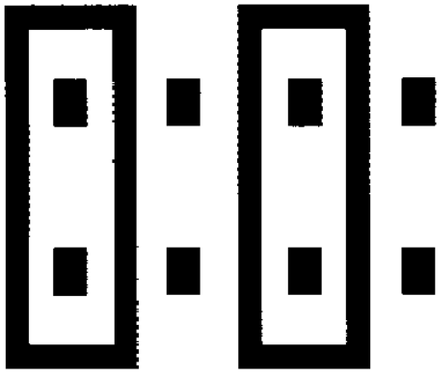
2C8H



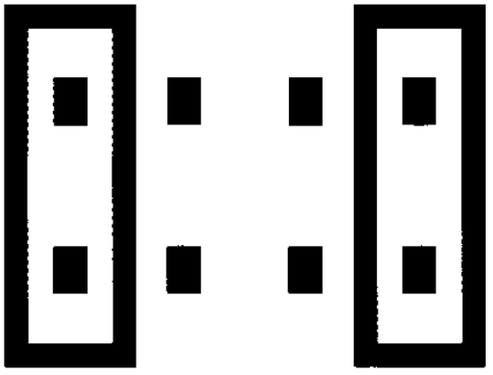
2D0H



2A8H



2B0H



[redacted]

JP1	1-2	3-4	5-6	7-8
280H	SHORT	SHORT	SHORT	SHORT
288H	SHORT	SHORT	SHORT	OPEN
290H	SHORT	SHORT	OPEN	SHORT
298H	SHORT	SHORT	OPEN	OPEN
2A0H	SHORT	OPEN	SHORT	SHORT
2A8H	SHORT	OPEN	SHORT	OPEN
2B0H	SHORT	OPEN	OPEN	SHORT
2B8H	SHORT	OPEN	OPEN	OPEN
2C0H	OPEN	SHORT	SHORT	SHORT
2C8H	OPEN	SHORT	SHORT	OPEN
2D0H	OPEN	SHORT	OPEN	SHORT
2D8H	OPEN	SHORT	OPEN	OPEN
2E0H	OPEN	OPEN	SHORT	SHORT
2E8H	OPEN	OPEN	SHORT	OPEN
2F0H	OPEN	OPEN	OPEN	SHORT
2F8H	OPEN	OPEN	OPEN	OPEN